

NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

CEI
IEC

60061-4

1990

AMENDEMENT 13
AMENDMENT 13

2010-08

Amendement 13

**Culots de lampes et douilles ainsi que calibres
pour le contrôle de l'interchangeabilité
et de la sécurité –**

**Quatrième partie:
Guide et information générale**

Amendment 13

**Lamp caps and holders together with
gauges for the control of interchangeability
and safety –**

**Part 4:
Guidelines and general information**

*Les feuilles de cet amendement sont à insérer dans la
CEI 60061-4 (1990)*

*The sheets contained in this amendment are to be inserted
in IEC 60061-4 (1990)*

© IEC 2010 Droits de reproduction réservés — Copyright - all rights reserved

International Electrotechnical Commission
Telefax: +41 22 919 0300

3, rue de Varembe Geneva, Switzerland
e-mail: inmail@iec.ch IEC web site <http://www.iec.ch>



IECNORM.COM : Click to view the full PDF of IEC 60061-4:1990/AMD13:2010

**NORME
INTERNATIONALE
INTERNATIONAL
STANDARD**

**CEI
IEC**

60061-4

Première édition
First edition
1990-02

Modifiée selon les Compléments:
Amended in accordance with Supplements:
A(1992), B(1994), C(1994), D(1995), et les amendements/amendments
5(1998), 6(2000), 7(2002), 8(2003), 9(2005), 10(2006), 11(2008), 12(2009)
et/and 13(2010)

**Culots de lampes et douilles ainsi que calibres
pour le contrôle de l'interchangeabilité
et de la sécurité –**

**Quatrième partie:
Guide et information générale**

**Lamp caps and holders together with
gauges for the control of interchangeability
and safety –**

**Part 4:
Guidelines and general information**

© IEC 2010 Droits de reproduction réservés — Copyright - all rights reserved

Aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photo-copie et les microfilms, sans l'accord écrit de l'éditeur.

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Electrotechnical Commission
Telefax: +41 22 919 0300

3, rue de Varembé Geneva, Switzerland
e-mail: inmail@iec.ch IEC web site <http://www.iec.ch>



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

IECNORM.COM : Click to view the full PDF of IEC 60061-4:1990/AMD13:2010

SOMMAIRE

	Pages
AVANT-PROPOS	4
INTRODUCTION	6

CONTENTS

	Page
FOREWORD	5
INTRODUCTION	7

	Feuilles		Sheet
Désignation internationale des culots de lampes et des douilles	7007-1-6	International designation of lamp caps and holders	7007-1-6
Nouveaux assemblages culot(socle)/douille; prescriptions de sécurité améliorée.....	7007-4-1	New cap(base)/holder fits; requirements for increased safety.....	7007-4-1
Politique sur la prolifération des assemblages culot/douille	7007-5-1	Non-proliferation policy lamp cap/holder fits	7007-5-1
Lignes de fuite et distances dans l'air pour culots sur lampes terminées	7007-6-3	Creepage distances and clearances for caps on finished lamps	7007-6-3
Adaptateurs multiusage	7007-7-1	Multi-purpose adapters	7007-7-1
Indications sur le maintien des culots dans les douilles.....	7007-8-1	Guidelines for the retention of caps in holders	7007-8-1
Douille/connecteur	7007-9-1	Lampholder/connector	7007-9-1
Calibres de la Publication 60061 de la CEI	7007-10-1	Gauges in IEC Publication 60061	7007-10-1
Tolérances recommandées pour les calibres dans la Publication 60061 de la CEI ...	7007-11-2	Recommended tolerances for gauges in IEC Publication 60061	7007-11-2
Expression "soudure" dans les feuilles de normes culots de lampes	7007-12-1	Expression "solder" in lamp cap sheets	7007-12-1
Essais de conformité pendant la fabrication.....	7007-13-1	Conformity testing during manufacture.....	7007-13-1
Guide concernant les nouveaux systèmes pour l'éclairage général.....	7007-14-1	Guidelines for new fits for general lighting	7007-14-1
Systèmes d'assemblage et de sécurité des lampes à culots E27 et E14.....	7007-20-1	Fit/safety systems for lamps with E27 and E14 caps.....	7007-20-1
Système d'ajustement E14		E14 fit system	
Diamètres nominaux de cols de lampes inférieurs à 22 mm	7007-21-1	Lamp neck diameters less than 22 mm nominal	7007-21-1
Lampes tubulaires à fluorescence munies de culots G5 et G13		G5 and G13 capped tubular fluorescent lamps	
Système de dimensionnement	7007-22-2	Dimensioning system	7007-22-2
Concept de douilles combinant lampe/starter pour lampes fluorescentes	7007-23-1	Combination style lamp/starter holders for fluorescent lamps	7007-23-1

INSTRUCTIONS POUR L'INSERTION DES
NOUVELLES PAGES DANS LA CEI 60061-4

1. Retirer la page de titre existante et la page 3 existante, et insérer la nouvelle page de titre et la nouvelle page 3.
2. Retirer les feuilles existante
7007-1-5 (pages 1/8, 2/8, 3/8, 4/8, 5/8, 6/8, 7/8 et 8/8)
7007-6-2 (pages 1/12, 2/12, 3/12, 4/12, 5/12, 6/12, 7/12, 8/12, 9/12, 10/12, 11/12 et 12/12)

et les remplacer par les feuilles
7007-1-6 (pages 1/12 to 12/12)
7007-6-3 (pages 1/10, 2/10, 3/10, 4/10, 5/10, 6/10, 7/10, 8/10, 9/10 et 10/10)

INSTRUCTIONS FOR THE INSERTION OF NEW
PAGES IN IEC 60061-4

- 1 Remove existing title page and existing page 3 and insert in their place new title page and new page 3.
2. Remove existing sheets
7007-1-5 (pages 1/8, 2/8, 3/8, 4/8, 5/8, 6/8, 7/8 and 8/8)
7007-6-2 (pages 1/12, 2/12, 3/12, 4/12, 5/12, 6/12, 7/12, 8/12, 9/12, 10/12, 11/12 and 12/12)

and insert in their place sheets
7007-1-6 (pages 1/12 to 12/12)
7007-6-3 (pages 1/10, 2/10, 3/10, 4/10, 5/10, 6/10, 7/10, 8/10, 9/10 and 10/10)

IECNORM.COM : Click to view the full PDF of IEC 60061-4:1990/AMD13:2010

AVANT-PROPOS

Le présent amendement a été établi par le sous-comité 34B: Culots et douilles, du comité d'études 34 de la CEI: Lampes et équipements associés.

Le texte de cet amendement est issu des documents suivants:

FDIS	Rapport de vote
34B/1544/FDIS	34B/1558/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de cet amendement.

Le comité a décidé que le contenu de cet amendement et de la publication de base ne sera pas modifié avant la date de stabilité indiquée sur le site web de la CEI sous "<http://webstore.iec.ch>" dans les données relatives à la publication recherchée. A cette date, la publication sera

- reconduite;
- supprimée;
- remplacée par une édition révisée, ou
- amendée.

FOREWORD

This amendment has been prepared by subcommittee 34B: Lamp caps and holders, of IEC technical committee 34: Lamps and related equipment.

The text of this amendment is based on the following documents:

FDIS	Report on voting
34B/1544/FDIS	34B/1558/RVD

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

	INTERNATIONAL DESIGNATION OF LAMP CAPS AND HOLDERS	Page 1/12
1 Introduction A coding system is in existence that can be used to assign designations to lamp caps and lampholders. Meaningful assignment can be made to the letters, numbers and symbols that make up this designation. The system has gained international acceptance and should be used as much as possible. It is self-evident that there is a relationship between a certain lamp cap and the lampholder to be used with it. This relation is reflected in the relevant designation, part of which is used in common for the two products. As a consequence of this system it is possible to compare caps and holders from various manufacturers and, where they are interchangeable, the same designation can be assigned to them. This system is also a powerful instrument for controlling proliferation of designs. Assignment of designations to new types of cap and holder is the prerogative of the experts group EPC of IEC Sub-Committee 34B. 2 Designation system It is an objective of this system that each assigned designation should be short and as easily pronounceable as possible to stimulate its use in practice. This system is based on several sub-parts made up of letters, numbers and symbols, each part having its own characteristics. Only one designation shall be assigned to a particular cap and holder. This system does not attempt to identify materials. Parts of a designation are joined directly together with no spaces or other separator marks. A completed designation of caps and holders takes the form as follows: designation of lamp cap: (a)(b)(c)-(d)/(e)x(f) designation of lampholder: (a)(b)(c)-(d) NOTE The use of an abbreviated lamp cap designation is permitted unless this might cause misunderstanding. The section of the designation preceding the oblique stroke refers to information which is important with regard to interchangeability of lamps fitted with a certain cap in the corresponding lampholder. That particular section of the designation will be the same for both the cap and its associated holder. The part of the lamp cap designation following the oblique stroke, if present, refers to certain important dimensions of the cap which are not a necessary part of the interchangeability requirements of the lamp in the lampholder. Such dimensions are, however, important for the mutual interchangeability of lamp caps of different origin on one type of lamp. NOTE Contrary to North American terminology, the IEC designates as "base" only the contact-making and fixing part of a capless lamp.		
	7007-1-6	IEC 60061-4 CEI 60061-4

	INTERNATIONAL DESIGNATION OF LAMP CAPS AND HOLDERS	Page 2/12																														
3 Primary designation letters 3.1 Part (a) 3.1.1 General Part (a) of a designation consists of one or more capital letters indicating the type of lamp cap. Although the following list refers to lamp caps, it has an analogous meaning for the holder. <table border="0"> <tr> <td style="vertical-align: top;">B</td><td style="vertical-align: top;">-</td><td>Bayonet cap</td></tr> <tr> <td style="vertical-align: top;">BA</td><td style="vertical-align: top;">-</td><td>Bayonet cap, originally intended for Automobile use</td></tr> <tr> <td style="vertical-align: top;">BM</td><td style="vertical-align: top;">-</td><td>Bayonet cap for pit lamp</td></tr> <tr> <td style="vertical-align: top;">C</td><td style="vertical-align: top;">-</td><td>Printed circuit cap</td></tr> <tr> <td style="vertical-align: top;">E</td><td style="vertical-align: top;">-</td><td>screw cap (Edison) EXAMPLE E27 - a screw cap</td></tr> <tr> <td style="vertical-align: top;">F</td><td style="vertical-align: top;">-</td><td>cap with one projected contact. Different forms of the contact are indicated by a small letter after the letter F, as follows: a - cylindrical pin b - fluted pin c - pin of special shape EXAMPLE Fa4 - a cap with one cylindrical contact pin</td></tr> <tr> <td style="vertical-align: top;">G</td><td style="vertical-align: top;">-</td><td>two or more projecting contacts, such as pins or posts</td></tr> <tr> <td style="vertical-align: top;">H</td><td style="vertical-align: top;">-</td><td>cap with heat spreader NOTE A heat spreader is used to spread the heat generated by the LED over a larger surface area but is not intended as a heat sink. In normal use it would be thermally joined to a part of the luminaire performing the heat sink function. The second designation letter can be used as a modifier according to clause 3.1.2. EXAMPLE CH14.65d - a printed circuit cap with heat spreader and two contact pads on a circle of 14,65 mm</td></tr> <tr> <td style="vertical-align: top;">K</td><td style="vertical-align: top;">-</td><td>cap with cable connections</td></tr> <tr> <td style="vertical-align: top;">P</td><td style="vertical-align: top;">-</td><td>Prefocus cap</td></tr> </table>			B	-	Bayonet cap	BA	-	Bayonet cap, originally intended for Automobile use	BM	-	Bayonet cap for pit lamp	C	-	Printed circuit cap	E	-	screw cap (Edison) EXAMPLE E27 - a screw cap	F	-	cap with one projected contact. Different forms of the contact are indicated by a small letter after the letter F, as follows: a - cylindrical pin b - fluted pin c - pin of special shape EXAMPLE Fa4 - a cap with one cylindrical contact pin	G	-	two or more projecting contacts, such as pins or posts	H	-	cap with heat spreader NOTE A heat spreader is used to spread the heat generated by the LED over a larger surface area but is not intended as a heat sink. In normal use it would be thermally joined to a part of the luminaire performing the heat sink function. The second designation letter can be used as a modifier according to clause 3.1.2. EXAMPLE CH14.65d - a printed circuit cap with heat spreader and two contact pads on a circle of 14,65 mm	K	-	cap with cable connections	P	-	Prefocus cap
B	-	Bayonet cap																														
BA	-	Bayonet cap, originally intended for Automobile use																														
BM	-	Bayonet cap for pit lamp																														
C	-	Printed circuit cap																														
E	-	screw cap (Edison) EXAMPLE E27 - a screw cap																														
F	-	cap with one projected contact. Different forms of the contact are indicated by a small letter after the letter F, as follows: a - cylindrical pin b - fluted pin c - pin of special shape EXAMPLE Fa4 - a cap with one cylindrical contact pin																														
G	-	two or more projecting contacts, such as pins or posts																														
H	-	cap with heat spreader NOTE A heat spreader is used to spread the heat generated by the LED over a larger surface area but is not intended as a heat sink. In normal use it would be thermally joined to a part of the luminaire performing the heat sink function. The second designation letter can be used as a modifier according to clause 3.1.2. EXAMPLE CH14.65d - a printed circuit cap with heat spreader and two contact pads on a circle of 14,65 mm																														
K	-	cap with cable connections																														
P	-	Prefocus cap																														
7007-1-6		IEC 60061-4 CEI 60061-4																														

	INTERNATIONAL DESIGNATION OF LAMP CAPS AND HOLDERS	Page 3/12
R - S - SV - T - W - X -	Recessed contact cap Shell cap - without protruding elements to hold the cap in the lampholder Shell cap with conical end (V-shaped) Telephone lamp cap a base wherein the electrical contact with the lampholder is made directly through the lead-in wires which lie on the surface of the base, the glass part (or the part of other insulating material) being essential for the fit in the holder. This designation also covers a separate cap of insulating material as a substitute for the integral base and meeting the same interchangeability requirements. NOTE Some earlier designs resembled a Wedge in shape; this led to the introduction of the reference letter "W". if it is not possible to apply a designation by following the rules listed, such lamp caps will be designated with a capital letter "X" followed by a serial number. EXAMPLE X511 - a glass base with two separate metal wings.	
3.1.2 Modifier I If a lamp cap has additional characteristics covered by one of the above capital letters which can be indicated by further capital letters, the whole combination of letters will be shown, the most significant letter(s) being placed first. EXAMPLE PK22s - a prefocus cap with cable connection. 3.1.3 Modifier II A lamp cap characterized in accordance with the rules in this specification may receive a designation already reserved for an existing cap. If such caps are not (or not perfectly) interchangeable with due regard to electrical or mechanical requirements, a capital X, Y, Z or U, or a combination of two or more of these, is added to the primary designation of the cap. These modifying letters follow the primary designation. If mechanically fixed contacts are at an angled position to the cap axis, the letter J is used. EXAMPLES: • BY22d - a B22 cap meeting special requirements. • GY16 - a G16 cap which is not interchangeable with the primary G16 cap. • PGJ13 - a PG13 cap with the contacts at an angled position to the cap axis.		
	7007-1-6	IEC 60061-4 CEI 60061-4

	INTERNATIONAL DESIGNATION OF LAMP CAPS AND HOLDERS	Page 4/12
3.1.4 Modifier III In exceptional cases part (a) of a designation may be preceded by a number, usually a 2. EXAMPLE 2G13 - A fit consisting of two G13 caps, juxtaposed at a certain distance. (Such a cap is used on U-shaped fluorescent lamps.) 3.2 Part (b) Part (b) of a designation consists of a number, which indicates the approximate value in millimetres of the principal dimension of the fit. This value is rounded to a maximum of one digit behind the decimal point (if appropriate). The relation between the principal dimension and the primary designation letter is as follows: For: B, BA, BM, K, S and SV - the diameter of the shell EXAMPLE BA15d - bayonet (automobile) cap having a shell diameter of approximately 15 mm. C - the circle on which the contacts are situated. E - the crest diameter of the screw thread F - the diameter or other similar dimension of the contact G - for two pins, the distance between the centres of the pins EXAMPLE G13 - a two-pin cap having a pin spacing of approximately 13 mm. for more than two pins, the diameter of the circumscribed circle on which the centres of the pins are situated P - the most important dimension of that part by which the lamp is located laterally R - the largest transverse dimension of that part of the insulating body which is essential for the fit in the holder T - the external width measured across the contact plates W - the combined thickness of the glass part (or the part of other insulating material) and one lead-in wire followed by the multiplication sign (x) and the width of the base. 3.3 Part (c) Part (c) of a designation consists of lower case letters indicating the number of contacts, plates, pins, etc. or flexible connections.		
7007-1-6		IEC 60061-4 CEI 60061-4

	INTERNATIONAL DESIGNATION OF LAMP CAPS AND HOLDERS	Page 5/12																					
The following code letters are used in this group: <table border="0" style="width: 100%;"> <tr> <td style="width: 10%;">s</td><td style="width: 10%; text-align: center;">-</td><td>for one contact</td></tr> <tr> <td>d</td><td style="text-align: center;">-</td><td>for two contacts</td></tr> <tr> <td></td><td></td><td>EXAMPLE E26d - an E26 cap having two bottom contacts</td></tr> <tr> <td>t</td><td style="text-align: center;">-</td><td>for three contacts</td></tr> <tr> <td>q</td><td style="text-align: center;">-</td><td>for four contacts</td></tr> <tr> <td></td><td></td><td>EXAMPLE G10q - a cap having four contact pins.</td></tr> <tr> <td>p</td><td style="text-align: center;">-</td><td>for five contacts</td></tr> </table> The shell of a cap shall not be considered as a contact regardless of whether it is a current carrying component or not. The contacts need not be of the same shape. 3.4 Part (d) Part (d) of a designation, if necessary, consists of symbols preceded by a hyphen to indicate additional elements that are important for interchangeability (e.g. a number 3 for a 3-pin bayonet cap or an indication number for a key configuration). EXAMPLES: • B22d-3 - a B22 cap having three locating pins. • PG22-6.35 - a prefocus cap having a collar of approximately 22 mm diameter and two contact pins with a spacing of approximately 6,35 mm. 3.5 Part (e) 3.5.1 General Part (e) of a designation consists of numbers immediately following an oblique stroke to indicate the approximate overall length of the cap expressed in millimeters. This length includes protruding insulation but excludes the height of contacts or pins. EXAMPLE B15d/19 - a B15d cap having an overall length of approximately 19 mm. 3.5.2 SV (festoon) caps The length of an SV (festoon) cap is measured between the open end of the shell and a circle of 3,5 mm diameter on the cone. In order to avoid misunderstanding, this length is stated behind a hyphen but before the oblique stroke if used.			s	-	for one contact	d	-	for two contacts			EXAMPLE E26d - an E26 cap having two bottom contacts	t	-	for three contacts	q	-	for four contacts			EXAMPLE G10q - a cap having four contact pins.	p	-	for five contacts
s	-	for one contact																					
d	-	for two contacts																					
		EXAMPLE E26d - an E26 cap having two bottom contacts																					
t	-	for three contacts																					
q	-	for four contacts																					
		EXAMPLE G10q - a cap having four contact pins.																					
p	-	for five contacts																					
7007-1-6		IEC 60061-4 CEI 60061-4																					

	INTERNATIONAL DESIGNATION OF LAMP CAPS AND HOLDERS	Page 6/12
3.6 Part (f) Part (f) of a designation consists of a number for caps having a skirt or spun-in shell. A number in the (f) group position is preceded by the multiplication sign (x) in the designation. The number indicates the approximate outside diameter of the skirt (excluding any flare) or the inside diameter of the open-end, in millimeters. EXAMPLE B22d/25x26 - a B22 cap having an overall length of approximately 25 mm and an outside skirt diameter of approximately 26 mm. 4 Other examples of designation and explanations EP10/14x11 prefocus screw cap having a crest screw thread diameter of approximately 10 mm, an overall length of approximately 14 mm, and a skirt diameter of approximately 11 mm. B22d-3(90°/135°)/25x26 bayonet cap having a diameter of approximately 22 mm, two contact plates, three locating pins radially disposed at angles of 90°, 135° and 135°, an overall length of approximately 25 mm and a skirt diameter of approximately 26 mm. BAY15d/19 bayonet (automobile) cap having offset locating pins, a diameter of approximately 15 mm, two contact plates and an overall length of approximately 19 mm. K59d/80x63 cap having two flexible connections, a shell diameter of approximately 59 mm, a shell length of approximately 80 mm and a skirt diameter of approximately 63 mm. R17d/10x35 recessed double contact cap having a largest transverse dimension of its insulating body of approximately 17 mm (essential for fit in holder), a shell height of approximately 10 mm and a shell diameter of approximately 35 mm. SV8.5-8 shell cap with conical end having a diameter of approximately 8,5 mm and a shell length of approximately 8 mm, measured between a circle of 3,5 mm diameter on the cone and the open end of the shell. T6.8 telephone lamp cap having an external width of approximately 6,8 mm, measured across the contact plates. EX10/13 screw cap having an additional requirement about the creepage distance, a crest screw thread diameter of approximately 10 mm and an overall length of approximately 13 mm.		
7007-1-6		IEC 60061-4 CEI 60061-4

DESIGNATION INTERNATIONALE DES CULOTS DE LAMPES ET DOUILLES

Page 7/12

1 Introduction

Il existe actuellement un système de codage pouvant être utilisé pour attribuer une désignation aux culots de lampes et aux douilles. Les lettres, chiffres et autres symboles constituant ces désignations ont un sens précis. Ce système a été universellement accepté et devrait être autant que possible utilisé.

Il est évident qu'il existe une correspondance entre un certain culot de lampe et la douille avec laquelle il doit être utilisé. Cette correspondance se manifeste dans les désignations respectives, dont une partie est commune aux deux produits.

Ce système permet de comparer les culots et les douilles de divers fabricants et la même désignation peut être attribuée à ces produits lorsqu'ils sont interchangeables. Ce système est également un moyen puissant pour maîtriser la prolifération des types; l'attribution de désignations aux nouveaux types de culots et de douilles est du ressort des experts du Groupe de Travail EPC du Sous-Comité 34B de la CEI.

2 Système de désignation

L'un des objectifs de ce système est que chaque désignation soit brève et aussi facile à prononcer que possible, afin de favoriser son utilisation.

Le système est basé sur plusieurs ensembles constitués de lettres, nombres et symboles, chacun ayant ses caractéristiques propres. A chaque type de culot ou de douille correspond une seule désignation. Le système n'a pas pour but d'identifier le (ou les) matériau(x) utilisé(s). Les diverses parties de la désignation se suivent directement, sans espaces ou autres signes de séparation. Une désignation complète de culot ou de douille a la forme suivante:

pour un culot de lampe: (a)(b)(c)-(d)/(e)x(f)

pour une douille de lampe: (a)(b)(c)-(d)

NOTE Pour les culots de lampes il est permis d'utiliser une désignation abrégée, à condition qu'elle ne puisse prêter à confusion.

La partie de la désignation qui précède la barre oblique contient les informations concernant l'interchangeabilité des lampes équipées d'un certain culot, dans la douille correspondante. Cette partie de la désignation est la même pour le culot et pour la douille qui lui est associée. La partie de la désignation qui suit la barre oblique, lorsqu'elle existe, concerne certaines dimensions importantes du culot, qui cependant ne font pas partie des caractéristiques nécessaires pour garantir l'interchangeabilité des lampes dans une douille. Ces dimensions sont toutefois importantes pour l'interchangeabilité des culots de différentes provenances sur un même type de lampe.

NOTE Dans la version anglaise de cette norme, et contrairement à la pratique nord-américaine, le terme "base" est utilisé uniquement pour indiquer la partie "tout verre" (le socle) d'une lampe destinée à assurer le contact et la fixation.

DESIGNATION INTERNATIONALE DES CULOTS DE LAMPES ET DOUILLES

Page 8/12

3 Lettres principales de désignation

3.1 Partie (a)

3.1.1 Général

La partie (a) de la désignation est constituée par une ou plusieurs lettres majuscules indiquant le type du culot de lampe.

La liste ci-dessous concerne les culots, mais elle est également applicable aux douilles.

- B - culot Baïonnette
- BA - culot Baïonnette, d'origine pour lampes Automobiles
- BM - culot Baïonnette pour lampes de Mineur
- C - culot pour circuit imprimé
- E - culot à vis Edison
EXEMPLE E27 - un culot à vis
- F - culot à contact saillant

Les différentes formes du contact sont identifiées par une lettre minuscule placée après la lettre F, comme indiqué ci-dessous:

- a - broche cylindrique lisse
- b - broche cylindrique profilée
- c - broche de forme spéciale

EXEMPLE Fa4 - un culot à une broche de contact cylindrique.

- G - culot à deux ou plusieurs contacts en saillie, tels que broches ou tiges
- H - culot avec diffuseur thermique

NOTE Un diffuseur thermique est utilisé pour dissiper la chaleur générée par les LED sur une grande surface mais ce n'est pas un échangeur thermique. En usage normal il peut être associé thermiquement aux parties du luminaires assurant la fonction d'échangeur thermique.

La lettre H peut être utilisée comme modification selon le paragraphe 3.1.2.

EXEMPLE CH14.65d – un culot pour circuit imprimé avec diffuseur thermique et deux plaquettes de contacts sur un cercle de 14,65 mm

- K - culot à connexion par câble
- P - culot préfocus

	DESIGNATION INTERNATIONALE DES CULOTS DE LAMPES ET DOUILLES	Page 9/12
R - S - SV - T - W - X -	culot à contact(s) encastré(s) culot à chemise cylindrique sans élément en saillie pour le retenir dans la douille culot à chemise cylindrique et extrémité conique (en "V") culot pour lampes de standards Téléphoniques socle de lampe où le contact électrique avec la douille est assuré directement par les entrées de courant qui reposent sur la surface du socle. La forme du socle de verre (ou d'un autre matériau isolant) est déterminante pour l'ajustement dans la douille. Cette désignation s'applique également aux culots en matériau isolant, remplaçant le socle et remplissant les mêmes fonctions. NOTE Certains socles plus anciens avaient la forme d'un coin ("wedge" en anglais), d'où la lettre "W" adoptée pour les désigner. si aucune désignation conforme aux règles ci-dessus n'est applicable, le culot en question sera désigné par un "X" majuscule suivi d'un numéro d'ordre. EXEMPLE X511 - un socle en verre avec deux ailettes métalliques séparées.	
3.1.2 Modificateur I		
	Si un culot de lampe présente une caractéristique additionnelle désignée par l'une des lettres capitales ci-dessus, cette caractéristique peut être indiquée par une lettre supplémentaire adéquate, la désignation entière étant formée par la combinaison de toutes les lettres requises, les plus significatives étant placées en premier. EXEMPLE PK22s - un culot préfocus muni d'un câble de connexion.	
3.1.3 Modificateur II		
	Il peut arriver qu'une désignation formée selon les règles ci-dessus ait déjà été attribuée à un culot existant. Si ces deux culots ne sont pas (ou non parfaitement) interchangeables au regard des prescriptions mécaniques ou électriques, on ajoutera à la désignation du culot concerné l'une des majuscules X, Y, Z ou U, ou bien une combinaison de deux ou trois de ces lettres, ce modificateur étant placé après la désignation principale. Si des contacts fixés mécaniquement se trouvent dans une position formant un angle avec l'axe du culot, on utilisera la lettre J.	
EXEMPLES:		
• BY22d - culot B22 devant satisfaire à des exigences spéciales • GY16 - culot G16 non interchangeable avec le culot G16 antérieur. • PGJ13 - culot PG13 dont les contacts forment un angle avec l'axe du culot.		
	7007-1-6	IEC 60061-4 CEI 60061-4

DESIGNATION INTERNATIONALE DES CULOTS DE LAMPES ET DOUILLES

Page 10/12

3.1.4 Modificateur III

Dans certains cas exceptionnels, la partie (a) d'une désignation peut être précédée d'un chiffre, généralement 2.

Ce chiffre indique que l'ensemble complet est constitué par une combinaison de deux (ou plusieurs) ensembles similaires.

EXEMPLE 2G13 - ensemble constitué par deux culots G13 fixés à une certaine distance. (De tels ensembles équipent les lampes à fluorescence en "U".)

3.2 Partie (b)

La partie (b) de la désignation consiste en un chiffre représentant la valeur approximative, en millimètres, de la cote principale du culot.

Cette valeur est arrondie à un chiffre maximum après la virgule (s'il y a lieu).

Cette cote principale est reliée comme suit à la lettre de la désignation principale:

Pour:

B, BA, BM, K, S et SV - le diamètre de la chemise

EXEMPLE BA15d - culot baïonnette pour lampes (d'automobiles), ayant une chemise d'environ 15 mm de diamètre

E - le diamètre au sommet du filet de vis

C - le cercle sur lequel les contacts sont situés

F - le diamètre, ou une autre cote similaire, du contact

G - dans le cas de deux broches, la distance entre les axes dans le cas de trois broches ou plus, le diamètre du cercle sur lequel sont situés les axes des broches

EXEMPLE G13 - culot à deux broches dont les axes sont situés à approximativement 13 mm.

P - la cote qui détermine le centrage latéral de la lampe

R - la plus grande cote transversale de la partie du corps isolant essentielle pour l'ajustement dans la douille

T - la largeur extérieure, mesurée par dessus les plaquettes de contact

W - la somme de l'épaisseur du socle et d'une seule entrée de courant, suivie du signe de multiplication (x) et de la largeur du socle.

3.3 Partie (c)

La partie (c) de la désignation est constituée par des lettres minuscules indiquant le nombre de contacts, plaquettes, broches, etc. ou de connexions flexibles.

DESIGNATION INTERNATIONALE DES CULOTS DE LAMPES ET DOUILLES

Page 11/12

Les lettres suivantes sont utilisées dans ce groupe:

- | | | |
|---|---|--|
| s | - | pour un contact |
| d | - | pour deux contacts |
| | | EXAMPLE E26d - culot E26 à deux contacts à la base |
| t | - | pour trois contacts |
| q | - | pour quatre contacts |
| | | EXAMPLE G10q - culot à quatre broches de contact |
| p | - | pour cinq contacts |

La chemise d'un culot n'est pas à considérer comme un contact, cela indépendamment du fait qu'elle est, ou non, un composant conducteur de courant. Les contacts ne doivent pas nécessairement être de même forme.

3.4 Partie (d)

La partie (d) de la désignation, lorsqu'elle est nécessaire, est constituée par un tiret suivi de symboles indiquant la présence d'éléments additionnels importants pour l'interchangeabilité (par exemple le chiffre 3 pour un culot baïonnette à trois ergots, ou un chiffre correspondant à une configuration).

EXEMPLES:

- B22d-3 - culot B22d à trois ergots.
- PG22-6.35 - culot préfocus à collerette d'environ 22 mm de diamètre et à deux broches de contact dont les axes se trouvent à environ 6,35 mm de distance.

3.5 Partie (e)

3.5.1 Général

La partie (e) de la désignation est constituée par une barre oblique suivie immédiatement par un chiffre indiquant la valeur approximative de la longueur totale du culot, en millimètres. Cette longueur comprend l'isolant en saillie, mais n'inclut pas la hauteur des contacts ou des broches.

EXEMPLE B15d/19 - culot B15d d'une longueur totale d'environ 19 mm.

3.5.2 Les culots SV (pour lampe navette)

La longueur d'un culot SV (pour lampe navette) est mesurée de l'extrémité ouverte de la chemise jusqu'à un cercle de 3,5 mm de diamètre sur la partie conique. Afin d'éviter tout malentendu, cette longueur est indiquée après le tiret mais avant la barre oblique, si celle-ci est utilisée.

DESIGNATION INTERNATIONALE DES CULOTS DE LAMPES ET DOUILLES

Page 12/12

3.6 Partie (f)

La partie (f) de la désignation consiste en un chiffre qui concerne les culots dont la chemise présente une jupe ou une partie restreinte. Dans la désignation, ce chiffre est précédé du signe de multiplication (x). Il indique, en millimètres, la valeur approximative du diamètre extérieur de la jupe (un évasement éventuel étant exclu), ou du diamètre intérieur de l'ouverture de la partie restreinte.

EXEMPLE B22d/25x26 - culot B22d d'une longueur totale d'environ 25 mm, ayant une jupe de diamètre extérieur d'approximativement 26 mm.

4 Autres exemples de désignations et explications

- EP10/14x11 culot préfocus à vis, dont le filet a un diamètre au sommet d'environ 10 mm, la longueur totale du culot étant d'approximativement 14 mm et le diamètre extérieur de la jupe d'environ 11 mm.
- B22d-3(90°/135°)/25x26 culot baïonnette d'un diamètre d'environ 22 mm, avec deux oeillets de contact et trois ergots radiaux disposés sous des angles de 90°, 135° et 135°, d'une longueur totale d'environ 25 mm, la jupe de la chemise ayant un diamètre extérieur d'environ 26 mm.
- BAY15d/19 culot baïonnette pour lampes (d'automobiles), à ergots décalés en hauteur, d'un diamètre approximatif de 15 mm et avec deux oeillets de contact, la longueur totale étant d'environ 19 mm.
- K59d/80x63 culot à deux connexions flexibles, ayant une chemise d'environ 59 mm de diamètre sur 80 mm de longueur et une jupe d'environ 63 mm de diamètre extérieur.
- R17d/10x35 culot à deux contacts encastrés, dont l'élément isolant a une dimension transversale (déterminante pour la fixation dans la douille) d'environ 17 mm, les dimensions approximatives de la chemise étant de 10 mm de hauteur et 35 mm de diamètre.
- SV8.5-8 culot à chemise cylindrique à extrémité conique, d'un diamètre approximatif de 8,5 mm et d'une longueur d'environ 8 mm mesurée de la base ouverte du cylindre à un cercle de 3,5 mm de diamètre à la surface du cône.
- T6.8 culot de lampe pour standards téléphoniques, d'une largeur approximative de 6,8 mm mesurée par dessus les plaquettes de contact.
- EX10/13 culot à vis satisfaisant à des exigences supplémentaires concernant les lignes de fuite, le diamètre au sommet du filet de vis étant d'environ 10 mm et la longueur totale du culot de 13 mm environ.

CREEPAGE DISTANCES AND CLEARANCES

FOR CAPS ON FINISHED LAMPS

Page 1/10

1 Introductory note

With the issue of the IEC report 60664: (1980), the supplement IEC 60664A (1981) as well as the amendment 1 (1989), investigations have been started in order to estimate its influence on the existing publications of IEC TC 34: "Lamps and related equipment".

The decision to transform the IEC report into a basic safety publication in accordance with IEC Guide 104 resulted in relevant changes which started with IEC 60598-1. A revised section 11 (creepage distances and clearances) is shown in the seventh edition (2008).

The basic safety publication IEC 60664-1 is in the basic principles identical with the former IEC report but has been amended to cover the latest state-of-the-art.

IEC 60664-1 applies to rated voltages and impulse voltages with rated frequencies up to 30 kHz. High frequency working voltages and ignition voltages exceeding 30 kHz are increasingly used. The aspect of high frequency voltage stress is covered by the basic safety publication IEC 60664-4.

This sheet of IEC 60061-4 covers creepage distances and clearances for rated voltages and rated impulse voltages with a rated frequency up to 30 kHz. Creepage distances and clearances for rated frequencies exceeding 30 kHz are under consideration.

Creepage distance and clearance matters for lampholders are covered by the lampholder standards IEC 60238, IEC 60400, IEC 60838-1 and IEC 61184.

For definitions of "functional insulation", "homogeneous field", "inhomogeneous field", "partial discharge" and other terms related to insulation coordination, see IEC 60664-1.

2 Reference documents

IEC 60061-1, *Lamp caps and holders together with gauges for the control of interchangeability and safety — Part 1: Lamp caps*

IEC 60061-2, *Lamp caps and holders together with gauges for the control of interchangeability and safety — Part 2: Lampholders*

IEC 60238, *Edison screw lampholders*

IEC 60400, *Lampholders for tubular fluorescent lamps and starterholders*

IEC 60598-1, *Luminaires — Part 1: General requirements and tests*

CREEPAGE DISTANCES AND CLEARANCES FOR CAPS ON FINISHED LAMPS

Page 2/10

IEC 60664-1:2007, *Insulation coordination for equipment within low-voltage systems — Part 1: Principles, requirements and tests*

IEC 60664-4:2005, *Insulation coordination for equipment within low-voltage systems — Part 4: Consideration of high frequency voltage stress*

IEC 60838-1, *Miscellaneous lampholders — Part 1: General requirements and tests*

IEC 61347-2-1:2006, *Lamp controlgear — Part 2-1: Particular requirements for starting devices (other than glow starters)*

IEC 61184, *Bayonet lampholders*

IEC Guide 104:1997, *The preparation of safety publications and the use of basic safety publications and group safety publications*

3 Guidelines and information

3.1 Special conditions

Creepage and clearance distances for caps/bases on finished lamps are usually considered in IEC 60061-1, because the special conditions under which caps/bases are used may allow smaller distances as required for the luminaire as well as for the holder.

NOTE It might be necessary to increase the distances on the unmounted cap in order to compensate for influences during lamp manufacturing, e. g. influence of soldering on creepage distances.

IEC 60598-1 takes care of this exemption with the following statement in section 11 (creepage distances and clearances):

"The values in Table 11.1 do not apply to components for which separate IEC publications exist, but do apply to the mounting and accessibility distances to the component when it is incorporated in the luminaire."

Special conditions allowing for smaller distances as required for the luminaire are e. g.:

- Less critical purpose of creepage distances and clearances (see 3.2)
- Reduced time under voltage stress (see 3.3)
- Reduced influence of electrical stress on solid insulation (see 3.4)

3.2 Purpose of creepage distances and clearances

The values in IEC 60598-1 and the lampholder standards are based on safety aspects. Therefore, the worst case, i. e. the inhomogeneous field, is the basis for the clearance and the associated creepage distances.

CREEPAGE DISTANCES AND CLEARANCES

FOR CAPS ON FINISHED LAMPS

Page 3/10

For caps/bases, however, in a number of cases a creepage or clearance distance has not a safety function but serves performance purposes only, i. e. there is not a basic (protection against electric shock) but a functional insulation (necessary for the correct operation).

Examples of such situations are the caps E14 and E27, where the lampholder should be so designed that the lamp caps are not accessible when they become live during insertion and when they are fully inserted. Therefore breakdown of the insulation between the contacts of the cap (sometimes the shell of the cap is one of the contacts) will not impair the safety of the system and therefore the dimensioning of the clearance may go into the direction of homogeneous field conditions.

This is of special interest for pulse voltages where by a well designed contour of the cap/base much higher values can be achieved than allowed for safety reasons. Without additional test, clearances may be dimensioned according to IEC 60664-1 table F.2 case A pollution degree 2. If tests according to IEC 60664-1 clause 6.1.2 prove good function then the clearances may be chosen smaller, but not smaller than for case B pollution degree 2 in the same table.

3.3 Time under voltage stress

The creepage distances of IEC 60664-1 have been determined for insulation intended to be under voltage stress for a long time (or continuously). Technical committees responsible for equipment in which insulation is under voltage stress for only a short time may consider allowing smaller creepage distances than those specified in IEC 60664-1 table F.4.

For such cases the following guidelines are given:

- Except for pollution degree 4, the creepage distance corresponding to one voltage step (according to IEC 60664-1, table F.4) lower may be used for insulation stressed for a total of 15 000 h or less. Similarly, for insulation stressed 1500 h or less, the creepage distance corresponding to two voltage steps (according to IEC 60664-1, table F.4) lower may be used. These degrees of relaxation from the conditions of continuous stress are provisional.
- Alternatively, for pollution degree 2, the creepage distances in table F.4 of IEC 60664-1 for material with $PTI \geq 600$ are applicable for all material groups.

The usual lamp life represents a short time condition under voltage stress and in order to maintain reliable electrical contact pollution degrees higher than 2 should be avoided; therefore, if higher pollution occurs, the contact area should be protected.

Additionally, the operation of the lamp will cause accelerated drying of the insulating surface and by this prevent tracking.

CREEPAGE DISTANCES AND CLEARANCES FOR CAPS ON FINISHED LAMPS

Page 4/10

In order to have the possibility to look at a cap/base independent of its use on special lamps, it was decided to apply the alternative 2, as mentioned before, to new cap/base designs which together with the direct relation to the rated voltage of the lamp resulted in table 1.

Table 1 - Minimum distances for a. c. (50 Hz/60 Hz) sinusoidal voltages

Distances (mm)	Rated voltage (V)					
	50	150	250	500	750	1000
Creepage distances and clearances ^b	0,6	1 ^a	1,5	3	4	5,5
^a In value given in IEC 60664-1 is 0,8 mm. The higher value of 1 mm was chosen to allow for impulse voltages up to 2 kV. ^b The creepage distance should be not less than the required clearance.						

The data as given in table 1 are basic recommendations. In the development of a new fit, all parameters which might have an influence on the final creepage or clearance distance should be taken into account. The result of this consideration is given on the IEC 60061-1 sheet for the cap. Therefore, the relevant value(s) on the standard sheet has (have) priority over the basic recommendations.

NOTE - As in pollution degree 2 temporary condensation has the most influence on creepage distances the above requirements apply to the inside and to the outside of the unmounted cap as well.

3.4 Influence of electrical stress on solid insulation

3.4.1 Failure mechanisms of solid insulation

In practice, as far as electric stress is concerned, two failure mechanisms of solid insulation are relevant:

- Short term stress (see 3.4.2)
- Long-term stress (see 3.4.3)

3.4.2 Short-term stress

Due to dielectric loss at high electric stress, increased heating will occur, which may lead to thermal instability and thermal breakdown. This usually takes place within some minutes and can be verified rather easily by a high-voltage test. In case of lamp caps/bases this is a condition which usually occurs during the ignition phase of discharge lamps, where non-sinusoidal pulse voltages are applied.

CREEPAGE DISTANCES AND CLEARANCES

FOR CAPS ON FINISHED LAMPS

Page 5/10

Usually the risk of thermal breakdown (if the insulation material is not ceramic) begins at pulse voltages above 5 kV (peak value) but it should be noted that in IEC 61347-2-1 the following time limitations are given:

"Ignitors with pulse voltages over 10 kV shall be provided with a device for time limitation of the starting operation. This device shall in case of non-igniting lamps, interrupt the generation of starting pulses within 3 s. This time limitation may be extended to 30 s where this information is provided on the label of the device. "

"Ignitors with pulse voltages over 5 kV and up to 10 kV shall be provided with a time-limitation device which shall interrupt the generation of pulses within 60 s."

3.4.3 Long-term stress

Solid insulation systems typically include gaps or voids either caused by different layers of insulation and interfaces between insulating parts, or by imperfect manufacturing of the solid insulating material. In such small gaps or voids partial discharges are very likely to occur at much lower stress than being typical for the thermal breakdown of solid insulation and will eventually cause failure of insulating materials.

Both the measurement of the phenomenon and the failure analysis are much more complicated than for the thermal breakdown, i. e. this aspect cannot be checked with a high voltage test.

In air, partial discharges can occur at peak voltages in excess of 300 V (the Paschen minimum). In practice it is unlikely to occur below 500 V. Failure is by gradual erosion and/or treeing leading to puncture or surface flashover. Insulation systems can have different properties: some can tolerate discharges throughout the economic life (e. g. ceramic insulators), others must be discharge-free. Voltage, repetition rate of discharges and discharge magnitude are important parameters.

As for caps/bases long term stress is usually caused by voltages equal or smaller than 500 V, i. e. the voltage of the mains supply or the output voltage of an electronic ballast, partial discharges in most cases are not likely to occur.

For further information see IEC 60664-1, 5.3 "Requirements for design of solid insulation".

If solid insulation is subjected to high frequencies, the dielectric losses of solid insulation and partial discharges become increasingly important.

The aspect of high frequency voltage stress on solid insulation is covered by the basic safety publication IEC 60664-4.